Cyber Security

Challenges in a Changing Internet Number Resource Environment

Hisham Ibrahim | 26-09-2017 | RIPE NCC Roundtable Meeting

Distributed Denial of Service (DDoS) Attacks

- If you want to take a network off the Internet, the easiest way to do it is with a DDoS attack.

- This is accomplished by simply blasting so much data at a network till it is overwhelmed.

- DDoS attacks are not new: hackers do this to sites they don't like and use it as a method of extortion.

- In 2007 the DDoS attack on Estonia marked the first time criminal spammer botnets threatened the national security of a country.

Distributed Denial of Service (DDoS) Attacks

The Cyber-Attacks in E:
August 2007

OCTOBER 5, 2012 BY DECETH

Turkish banks & gove
on Christmas holiday

Colossal 1 teraby
firm - reports

Published time: 28 Sep, 2016 18:30

Emergent Tech ▸ Internet of Things

152k cameras in 990Gbps record-breaking dual DDoS

Hacked low-powered cameras and internet-of-things things

Welcome > Blog Home > Critical Infrastructure > Dyn Confirms DDoS Attack Affecting Twitter, Github, Many Others

47 💬   SHARE ▾

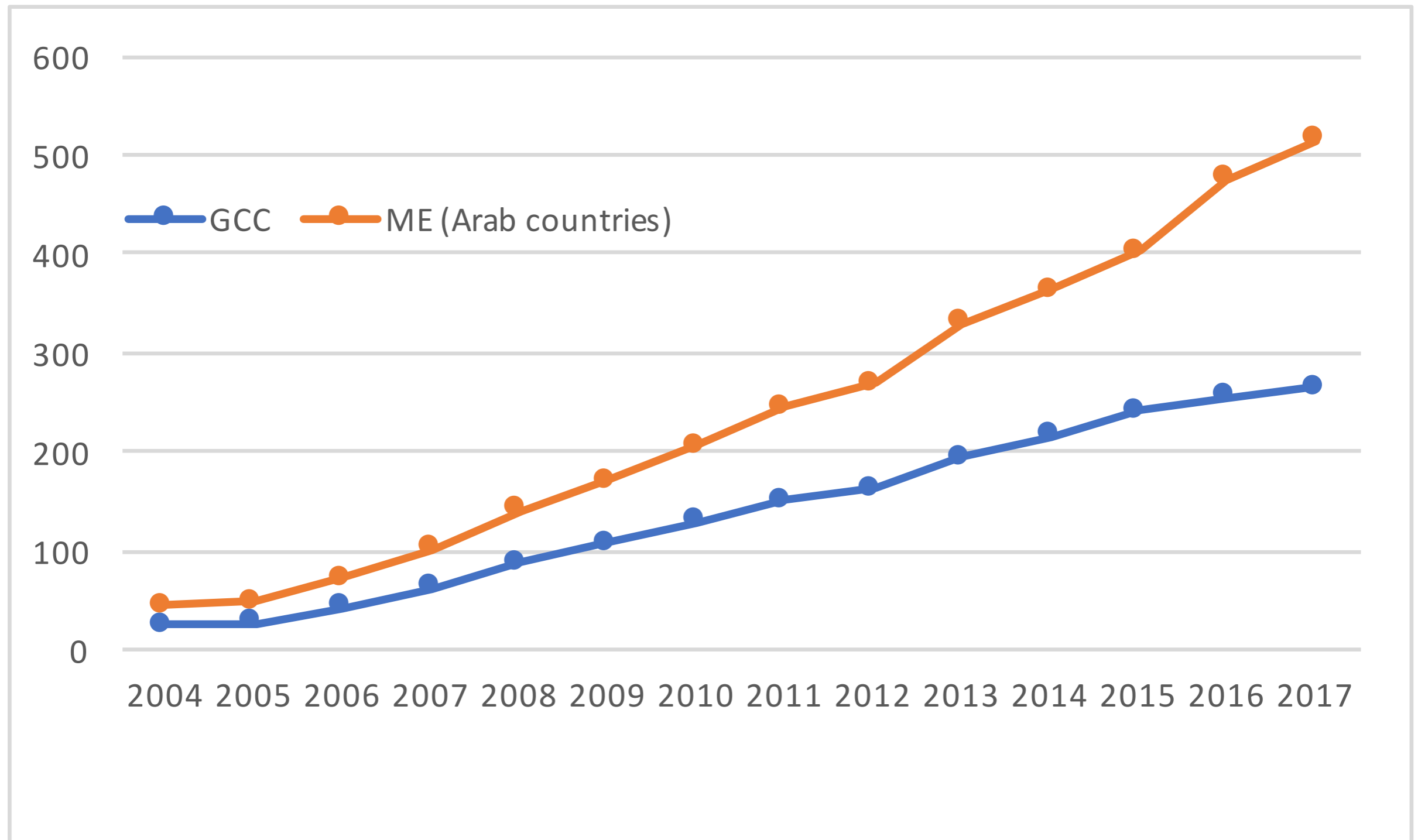DYN CONFIRMS DDOS ATTACK AFFECTING TWITTER, GITHUB, MANY OTHERS

of service (DDoS) attack has been
2,463 compromised low-powered
s which punted a media outlet off

3

Autonomous System Numbers (ASNs)
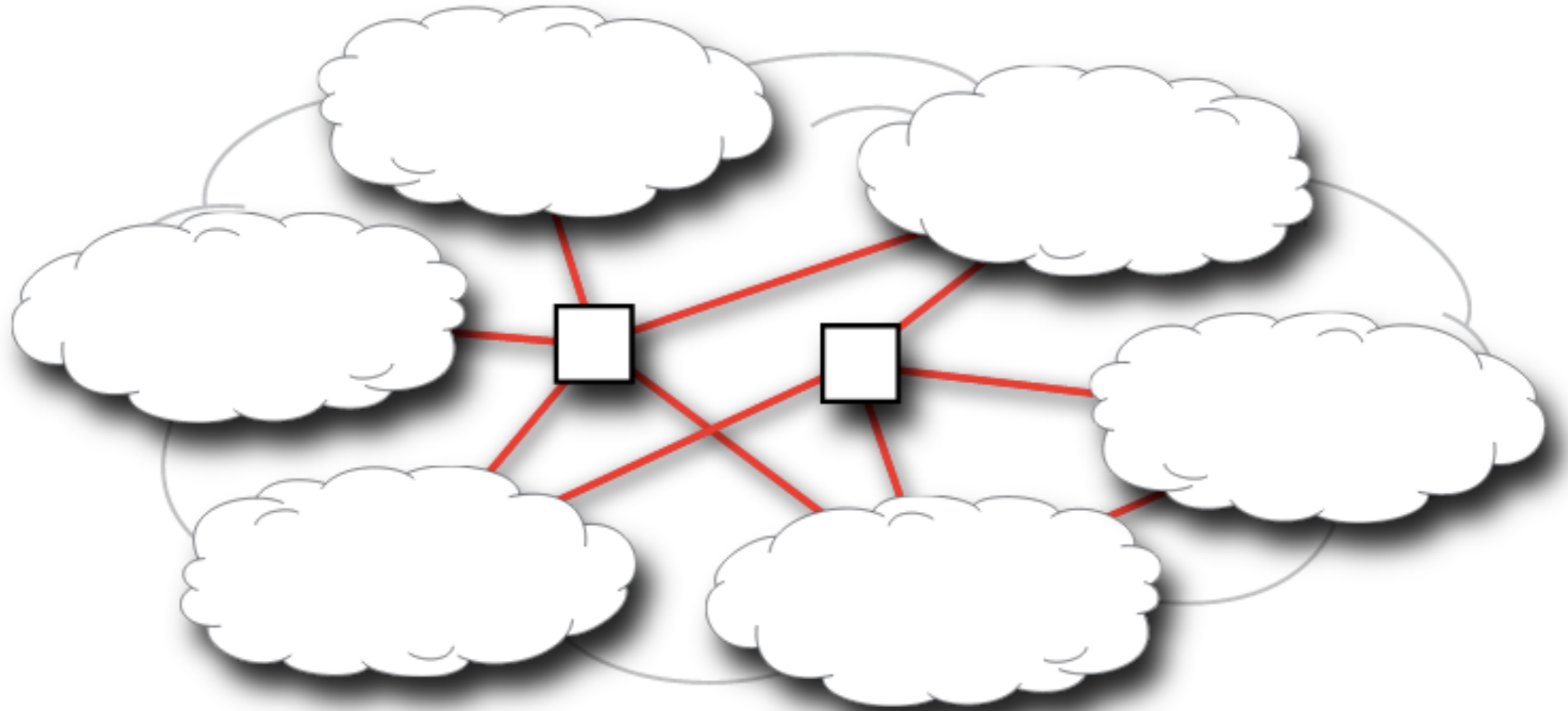
Today the Internet has roughly 60,000 autonomous networks that are interconnected.

Advertised ASNs

Advertised ASNs

	Total number of advertised ASNs (ME-Arab)	Average number of advertised ASNs (ME-Arab)	Median of advertised ASNs (ME-Arab)	Total number of advertised ASNs (GCC)	Average number of advertised ASNs (GCC)	Median of advertised ASNs (GCC)
2004	44	4	2	25	4	3
2007	515	43	33	265	44	35

Advertised ASNs

- Total Number of advertised ASNs from the Middle East (Arab countries) = 515 ASNs

- Total Number of advertised ASNs from the GCC countries = 265 ASNs

- Total Number of advertised ASNs from Saudi Arabia = 115 ASNs

- Total Number of advertised ASNs from United Kingdom = 1692 ASNs

ASNs - Breakdown by Industry

	Countries with advertised ASNs	Countries without advertised ASNs
Telecom /ISP	12	0
Data Centers	10	2
Academic / Research	9	3
Government	8	4
Enterprise / Infrastructure	8	4
Banking / Financial	7	5

Barclays Bank UK

AS12701 Barclays Bank plc

ASN	Name
AS5713	Telkom SA Ltd.
AS32787	Akamai Technologies, Inc.
AS3741	IS
AS8220	COLT Technology Services Group Limited
AS10021	KVH Co.,Ltd
AS44022	Barclays Bank PLC
AS6421	TATA COMMUNICATIONS (AMERICA) INC
AS2914	NTT America, Inc.
AS9293	NTT Com Asia Limited
AS702	Verizon Business/UUnet Europe

AS44022 Barclays Bank PLC

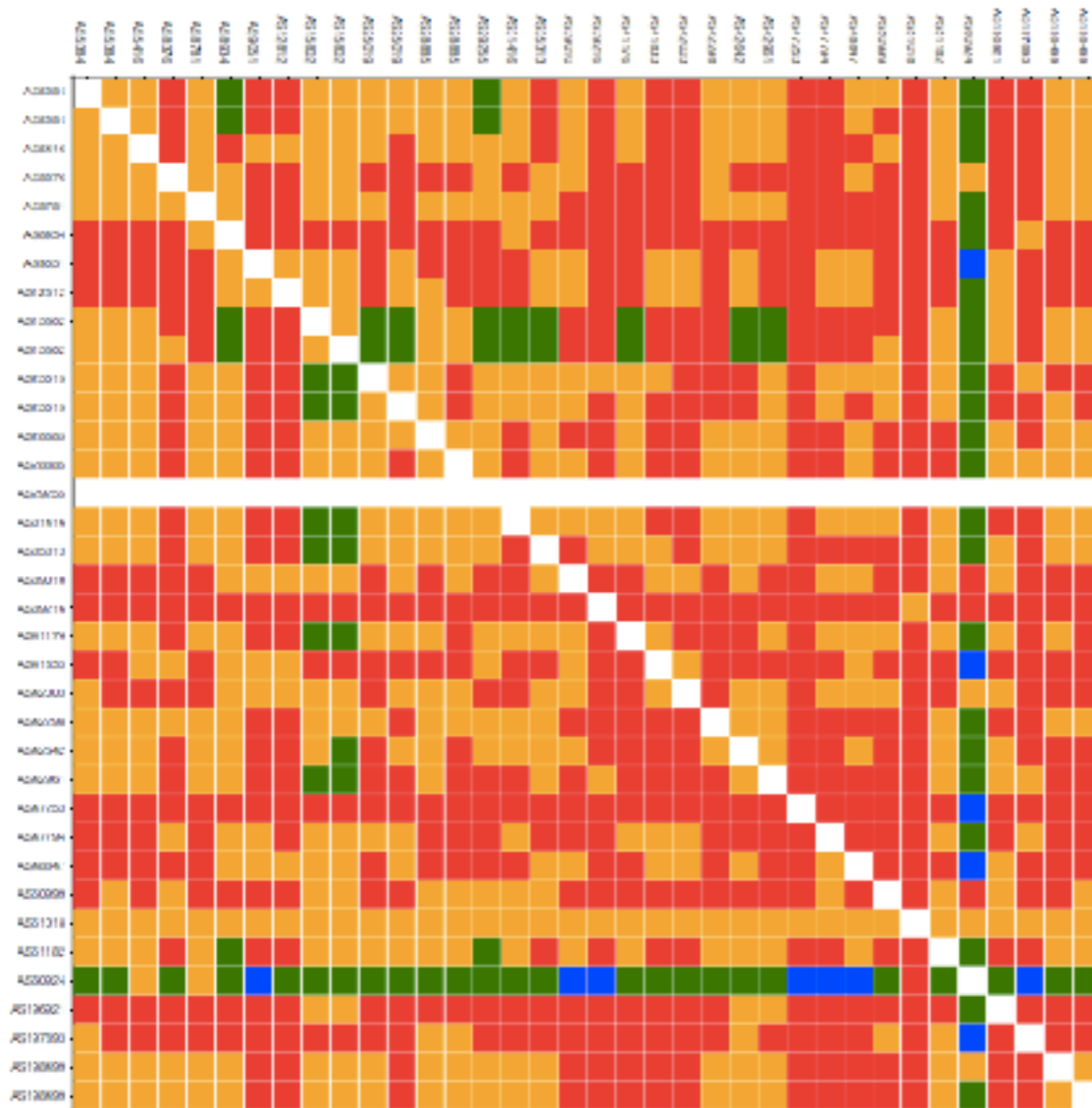| ASN	Name
AS32787	Akamai Technologies, Inc.
AS1273	Cable and Wireless Worldwide plc
AS702	Verizon Business/UUnet Europe
AS8220	COLT Technology Services Group Limited
AS2856	British Telecommunications PLC

Middle East Traffic Routes

Why build an IXP?

Redundant Transit Providers

Redundant Transit Providers

IXP

IXP

Blue Customer

Green Customer
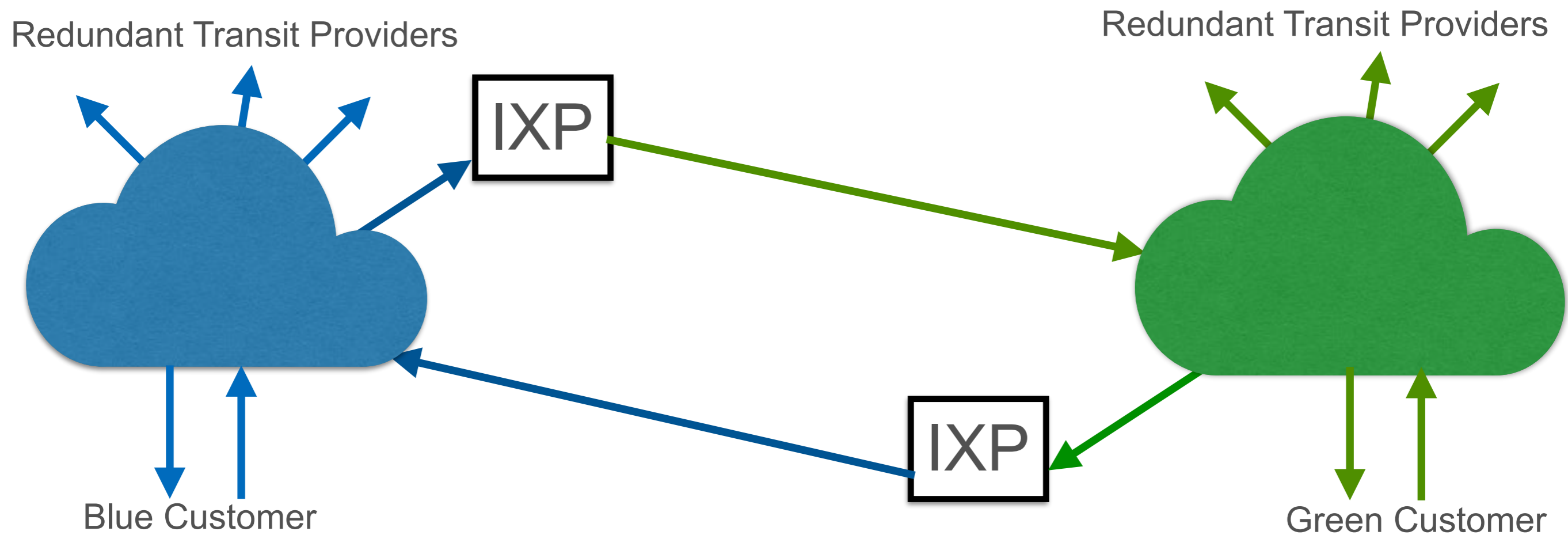
Arab ME Countries with IXPs

- Lebanon

- Palestine

- United Arab Emirates

Root Server Instances

Countries with no root server instances	2
Countries with a single instance	2
Countries with multiple instances	8

Countries with a single root servers	3
Countries with multiple root servers	7

Root instances deployed in a single city	6
Root instances deployed in multiple cities	4

Source: http://www.root-servers.org/ 13

Country Code Top Level Domains

- The Domain Name System Security Extensions (DNSSEC)

- Hosting neighbouring countries ccTLDs and other TLD nameservers of interest domestically helps strengthen the regional Internet.

- The RIPE NCC offers a best-effort secondary name service to some country code top-level domain (ccTLD) operators who are in the start-up phase of their operations.

Questions

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